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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/734,008

12/10/2003

Richard D. Bunch

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MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C  
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EXAMINER

GOFF II, JOHN L

ART UNIT

PAPER NUMBER

1733

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/734,008

Applicant(s)

BUNCH ET AL.

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.  
4a) Of the above claim(s) 27-34 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-26 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This action is in response to the amendment filed on 12/22/06.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 102***

3. Claims 19-25 are rejected under 35 U.S.C. 102(b) as anticipated by Hacker et al. (U.S. Patent Application Publication 2002/0002265).

Hacker et al. disclose a method of producing a composition having excellent planarization properties comprising a novolac resin and a solvent added thereto (Paragraphs 5, 8, 18, 19, 21, and 22). Hacker et al. teach the solvent comprises for example any of those disclosed in claim 24 including (only) ethyl acetate (a solvent having a boiling point of 77 °C) (Paragraph 18). It is noted a novolac resin is considered a resist adhesive resin as evidenced by claim 23.

Regarding claim 20, Hacker et al. teach the novolac resin is present in an amount of for example about 50 wt.%, (Paragraph 19) such that the claim limitation is met.

Regarding the limitation "of improving the adhesive characteristics of an adhesive composition for use in bonding a ceramic material to a manufacturing tool" as stated in the preamble, it is noted this limitation is merely the intended use of the produced composition and is given little weight to further limit the scope of the claims as no further structural limitations are required, it being noted the improved composition produced by Hacker et al. is capable of being used in this manner (See MPEP 2111.02).

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4. Claims 19 and 21-26 are rejected under 35 U.S.C. 102(b) as anticipated by Uetani et al. (U.S. Patent Application Publication 2001/0026905).

Uetani et al. disclose a method of producing a resist composition comprising a novolac resin and a solvent added thereto such as (only) acetone (a solvent having a boiling point between 30 and 80 °C) (Paragraphs 10 and 22). It is noted the novolac resin taught by Uetani et al. is considered a resist adhesive resin as evidenced by claim 23.

Regarding the limitation “of improving the adhesive characteristics of an adhesive composition for use in bonding a ceramic material to a manufacturing tool” as stated in the preamble, it is noted this limitation is merely the intended use of the produced composition and is given little weight to further limit the scope of the claims as no further structural limitations are required, it being noted the improved resist composition produced by Uetani et al. is capable of being used in this manner (See MPEP 2111.02).

5. Claims 19 and 21-26 are rejected under 35 U.S.C. 102(b) as anticipated by Teiichi et al. (WO 01/60938 with U.S. Patent Application Publication 2003/0069331 used as a translation).

Teiichi et al. disclose a method of producing an adhesive composition having excellent heat and moisture resistance with no volatilization for bonding a substrate, e.g. a ceramic material, to another substrate, e.g. ceramic semiconductor chip, comprising an epoxy adhesive resin, e.g. novolac resin, and a solvent added thereto such as (only) acetone (a solvent having a boiling point between 30 and 80 °C) (Paragraphs 1, 31, 33, 131, 137, 145, and 152). It is noted the epoxy adhesive resins including novolac resins taught by Teiichi et al. are considered resist adhesive resins.

Regarding the limitation “of improving the adhesive characteristics of an adhesive composition for use in bonding a ceramic material to a manufacturing tool” as stated in the preamble, it is noted this limitation is merely the intended use of the produced composition and is given little weight to further limit the scope of the claims as no further structural limitations are required, it being noted the improved composition produced by Teiichi et al. is capable of being used in this manner (See MPEP 2111.02).

***Claim Rejections - 35 USC § 103***

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 15-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruiz (U.S. Patent 5,406,694) in view of Teiichi et al.

Ruiz discloses a method of forming a slider for a hard disk drive including providing a ceramic chunk (40 of Figure 6) from a wafer and bonding the air bearing side of the ceramic chunk to a ceramic manufacturing tool (50 of Figure 6) through a layer of thermoset adhesive (Figure 6 and Column 1, lines 6-8 and Column 5, lines 35-38 and Column 7, lines 38-49). Ruiz does not specifically describe using an adhesive including a solvent. Teiichi et al. disclose a

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method of producing a thermoset adhesive composition having excellent heat and moisture resistance with no volatilization for bonding a ceramic substrate, e.g. a ceramic material, to another ceramic substrate, e.g. semiconductor chip, comprising an epoxy adhesive resin, e.g. novolac resin and wherein it is noted the epoxy resins are considered resist adhesive resins, and a solvent added thereto such as (only) acetone (a solvent having a boiling point between 30 and 80 °C) (Paragraphs 1, 31, 33, 131, 137, 145, and 152). It would have been obvious to one of ordinary skill in the art at the time the invention was made to adhere the ceramic chunk to the ceramic manufacturing tool as taught by Ruiz using the thermoset adhesive including solvent taught by Teiichi et al. which has excellent heat and moisture resistance with no volatilization.

Regarding claim 20, Teiichi et al. do not specifically disclose the amount of novolac adhesive resin in the adhesive composition. Absent any unexpected results, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the particular novolac adhesive resin content in Ruiz as modified by Teiichi et al. as a function of the heat and moisture resistance properties of the adhesive composition as doing so would have required nothing more than ordinary skill and routine experimentation.

8. Claims 1-5, 7-10, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruiz and Teiichi et al. as applied to claims 15-26 above, and further in view of Tanaka et al. (U.S. Patent 4,376,194).

Ruiz and Teiichi et al. as applied above teach all of the limitations in claims 1-10 and 12-14 except for a specific teaching of applying the adhesive composition to bond the ceramic chunk to the ceramic manufacturing tool by applying the adhesive composition to the ceramic chunk, contacting the ceramic manufacturing tool with the adhesive composition on the surface

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of the ceramic chunk to bond the tool and chunk, and subjecting the adhesive composition located between the ceramic chunk and ceramic tool to conditions effective to remove the solvent from the adhesive. Teiichi et al. teach applying the adhesive composition to bond two substrates by first forming the adhesive composition into an adhesive film, placing the adhesive film, between the two substrates, and contacting the substrates and adhesive film to bond the two substrates, but Teiichi et al. are not limited to this method (Paragraph 148). Tanaka et al. disclose applying an adhesive composition including a solvent to bond two substrates by applying the adhesive composition to a first substrate, contacting a second substrate with the adhesive composition on the surface of the first substrate to bond the first and second substrates, and subjecting the adhesive composition located between the substrates to conditions effective remove the solvent from the adhesive (Column 8, lines 46-52). Tanaka et al. also note as an alternative forming the adhesive into a film and then bonding the two substrates (Column 8, lines 20-22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the adhesive composition as taught by Ruiz as modified by Teiichi et al. by applying the adhesive composition to the ceramic chunk, contacting the ceramic manufacturing tool with the adhesive composition on the surface of the ceramic chunk to bond the tool and chunk, and subjecting the adhesive composition located between the ceramic chunk and ceramic manufacturing tool to condition effective to remove the solvent from the adhesive as shown by Tanaka et al. to avoid the extra step of forming the adhesive composition into a film.

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9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruiz, Teiichi et al., and Tanaka et al. as applied to claims 1-5, 7-10, and 12-14 above, and further in view of Schafer (U.S. Patent 5,421,884).

Ruiz, Teiichi et al, and Tanaka et al. as applied above teach all of the limitations in claim 11 except for a specific teaching of using vacuum conditions to remove the solvent from between the ceramic chunk and ceramic manufacturing tool. Schafer is exemplary of the known technique for removing solvent from an adhesive in the microelectronics industry by applying vacuum and heat conditions to the adhesive to remove substantially all air bubbles and solvent inclusions within the adhesive (Column 1, lines 29-34 and Column 3, lines 30-39). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Ruiz as modified by Teiichi et al. and Tanaka et al. vacuum conditions to remove the solvent from the adhesive as shown for example by Schafer to remove substantially all air bubbles and solvent inclusions within the adhesive.

10. Claims 1, 5, 6, 8-10, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruiz in view of Asami et al. (JP 60221476 and see also the JPO and Derwent abstracts) and Tanaka et al.

Ruiz discloses a method of forming a slider for a hard disk drive including providing a ceramic chunk (40 of Figure 6) from a wafer and bonding the air bearing side of the ceramic chunk to a ceramic manufacturing tool (50 of Figure 6) through a layer of thermoset adhesive (Figure 6 and Column 1, lines 6-8 and Column 5, lines 35-38 and Column 7, lines 38-49). Ruiz does not specifically describe using an adhesive including a solvent. Asami et al. disclose a method of producing an adhesive bonding composition, considered a thermoset adhesive



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composition, having excellent heat and solvent resistance wherein the composition comprises an acetate cellulose polymer/resin considered a resist adhesive resin and a solvent added thereto such as (only) acetone (a solvent having a boiling point between 30 and 80 °C) (See the JPO and Derwent abstracts). It would have been obvious to one of ordinary skill in the art at the time the invention was made to adhere the ceramic chunk to the ceramic manufacturing tool as taught by Ruiz using the thermoset adhesive including solvent taught by Asami et al. which has excellent heat and solvent resistance.

Ruiz and Asami et al. do not specifically teach applying the adhesive composition to bond the ceramic chunk to the ceramic manufacturing tool by applying the adhesive composition to the ceramic chunk, contacting the ceramic manufacturing tool with the adhesive composition on the surface of the ceramic chunk to bond the tool and chunk, and subjecting the adhesive composition located between the ceramic chunk and ceramic tool to conditions effective to remove the solvent from the adhesive. Tanaka et al. disclose applying an adhesive composition including a solvent to bond two substrates by applying the adhesive composition to a first substrate, contacting a second substrate with the adhesive composition on the surface of the first substrate to bond the first and second substrates, and subjecting the adhesive composition located between the substrates to conditions effective remove the solvent from the adhesive (Column 8, lines 46-52). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the adhesive composition as taught by Ruiz as modified by Asami et al. by applying the adhesive composition to the ceramic chunk, contacting the ceramic manufacturing tool with the adhesive composition on the surface of the ceramic chunk to bond the tool and chunk, and subjecting the adhesive composition located between the ceramic chunk

and ceramic manufacturing tool to condition effective to remove the solvent from the adhesive as shown by Tanaka et al. to easily bond the ceramic chunk and ceramic manufacturing tool.

### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue, "While there are some circumstances in which it is permissible to ignore a claim limitation appearing in the preamble, case after case says that a claim limitation appearing in the preamble must be given effect if the applicant relies on that limitation to distinguish prior art. "Clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation." *Catalina Marketing Int'l Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808-09 (Fed. Cir. 2002); see also, e.g., *Invitrogen Corp. v. Biocrest Manufacturing, L.P.*, 327 F.3d 1364 (Fed. Cir. 2003). The quoted preamble limitation should therefore be seen as binding, not ignored."

Claim 19 requires adding a solvent having a particular boiling point to an adhesive resin to form an improved composition. The preamble of claim 19 merely states the intended use of the composition formed by the method of claim 19, i.e. "for use in bonding a ceramic material to a manufacturing tool". The treatment of the preamble is set forth in MPEP 2111.02. The "for use" statement in the preamble is given little weight by the examiner to further limit the scope of the claims as no further structural limitations relating to the method of forming the composition are required, it being noted the compositions produced by the applied art are capable of being

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used in the manner required by the “for use” statement. Applicants argument that “case after case says that a claim limitation appearing in the preamble must be given effect if the applicant relies on that limitation to distinguish the prior art” appears based on infringement decisions and is not directly applicable to the current situation wherein MPEP 2111.02 clearly sets forth the treatment of the preamble as it relates to intended use statements in the prosecution of a patent application.

Applicants further argue, “While the Examiner makes an obviousness rejection, the Examiner does not provide the reasoning required for an obviousness rejection, such as the motivation to modify the teachings of the references (Hacker, Uetani, and Teiichi) and use the process of those references in a preparation designed to bond a manufacturing tool to a ceramic material.”

It is noted in the previous Office Action claim 19 was rejected under 35 U.S.C. 102/103 over Hacker, Uetani et al., and Teiichi et al. wherein while it was clearly set forth the resins taught by each of the references were considered resist adhesive resins, i.e. the claim was anticipated, a 35 U.S.C. 103 rejection was also made to clarify that because both the references and claims disclosed the same resin it would have been obvious to one of ordinary skill in the art the resins taught by the references are resist adhesive resins. However, as applicants have not shown or argued that the resins of the references are not resist adhesive resins the 35 U.S.C. 103 rejections are withdrawn, and claim 19 remains anticipated by each of Hacker, Uetani et al., and Teiichi et al.

Applicants further argue, “The only thing the Examiner says about why one would pluck out Teiichi’s class of adhesives from among all other adhesives to use in

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Ruiz's slider manufacturing process is that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to adhere the ceramic chunk to the ceramic manufacturing tool as taught by Ruiz using the thermoset adhesive including solvent taught by Teiichi et al. which has excellent heat and moisture resistance with no volatilization." (Office Action at 6.) However, "excellent heat and moisture resistance with no volatilization" do not rank high in the qualities required for an adhesive for slider manufacture. Those qualities by themselves would not motivate a person of skill in the art to use an adhesive in Teiichi's class rather than any of the hundreds or thousands of other available adhesives."

Ruiz is directed to bonding two ceramic substrates using a thermoset adhesive composition wherein Teiichi et al. disclose a thermoset adhesive composition having excellent heat and moisture resistance with no volatilization for bonding two ceramic substrates such that the combination of Ruiz and Teiichi et al. would have been obvious to produce the bonded ceramic substrates with an adhesive having excellent heat and moisture resistant with no volatilization. The motivation for combining Ruiz and Teiichi et al. was clearly set forth, it being further noted while not required for the rejection to be proper the motivation suggested by Teiichi et al. for excellent heat and moisture resistance with no volatilization coincides with applicants reasoning set forth in paragraph [0042] wherein the adhesive creates little to or no thermal distortion during bonding and functions as a sealant.

Applicants further argue, "Furthermore, to get the compositions recited in claim 19, one must pluck out from Teiichi's broad class of epoxy adhesives not just any member of that class, but a resist adhesive specifically. Thus, the combination of Ruiz

and Teiichi, even if it were proper, does not produce what is claimed, namely, a resist adhesive with particular solvents and used in a particular process, but rather produces a suggestion to use a much broader class of adhesives in Ruiz's process. Nothing whatever in Teiichi points to the resist resins as being of any particular interest or merit or utility compared to any other members of Teiichi's broad class of epoxy adhesives. Nothing points to any characteristics of those resins that one might see as making them especially useful in Ruiz's process." and "The Examiner claims that "one of ordinary skill in the art at the time the invention was made would have readily appreciated that the novolac adhesive resin[s] taught by Teiichi et al. are considered resist adhesive resins in the art as both comprise the same." The novolacs are in general a broad class of phenol-formaldehyde and related polymers. While it is true that certain novolac resins are employed as resists, there is no teaching in Teiichi to employ such a resin in preference to a novolac resin which is not employed as a resist. Teiichi simply teaches a broad class of epoxy resins and then, giving a long list of resins in that class, mentions novolac resins generally and then a few particular novolac resins by trade name."

Claim 19 requires a "resist adhesive resin". All of the epoxy resins taught by Teiichi et al. are considered "resist adhesive resins" as applicants have not shown a "resist adhesive resin" to require anything other than a resin. The novolac resins taught by Teiichi et al. are specifically noted to satisfy claims 7, 16, 22, and 23 wherein Teiichi et al. only disclose two classes of epoxies such as bifunctional epoxies and novolak resins such that even if bifunctional epoxies were somehow shown to not meet a "resist adhesive resin" then Teiichi et al. is considered to specifically teach novolak resins which are considered a "resist adhesive resin" as further

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evidenced by the claims specifically requiring the resin. Additionally as noted above, as the resins of each reference including Teiichi et al. were specifically described as having resins considered "resist adhesive resins" and applicants have not shown otherwise all 35 U.S.C. 103 rejections made regarding the consideration of the resins of the references as the same as the resins of the claims as both comprise the same are withdrawn.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John L. Goff  
Patent Examiner  
Art Unit 1733